FIG. 9 illustrates the edge treatment of a prism lens of moderate minus correction where portion **25** is beveled at the desired angle to the outer convex surface of the lens at **24**.

FIG. **10** illustrates a plus correction lens where a concave bevel at **26** extends to the desired lens thickness at **27**, and the lens is lenticulated from the outer surface at **28** to the beveled portion at **27**.

Proper shaping of the lower edge is desirable not only for comfort but also to maximize the effect of the upper and lower lid forces in causing the lens to translate from distance to near vision as hereinbefore described.

As illustrated in FIGS. **5** and **7**, the vertical translation of the lens to the near distance mode requires the apex portion of the lens to move onto the sclera a distance of from about 2 to 4 mm beyond its normal, centered resting position. Since the curvature of the sclera is less than that of the cornea, the apex portion of the lens tends to straighten from its normal curvature in the near distance mode as illustrated in FIG. **4**. These differences in curvature create forces which act upon the lens during translation as a resistance to upward vertical movement. These forces can be reduced, and the translation of the lens more readily accomplished, by modifying the lens as illustrated in FIG. **11** and FIG. **12** to permit the apex of the lens to adapt to the lesser curvature of the sclera during translation.

More specifically, with reference to FIGS. **11** and **12**, lens **10** is provided with an area of weakness **15** in the form of a groove, channel or otherwise thinned section extending at least partially across the lens in the area of truncation between optical zone D and the apex of the lens. The thinned area is horizontally disposed across the lens and imparts flexibility to the apical portion of the lens by acting much like an integral hinge in the lens. Since the lens typically is required to move upward onto the sclera a distance of 2 to 4 mm during translation, the thinned area is preferably located at least b **2** mm below the apex of the lens.

The thinned area is preferably located on the outer surface of the lens as illustrated in FIGS. **11** and **12**, but may alternatively be similarly located on the inner surface. The outer surface location provides an additional advantage in that the forces exerted by the upper eyelid during translation of the lens are increased as the eyelid moves across the thinned area, and will assist in causing the lens to translate to its near vision mode.

While the preceding description has dealt with one specific bifocal lens design, other multifocal designs are contemplated in accordance with the present invention as illustrated, for example, in FIGS. **13** through **20**.

FIG. **13** and FIG. **14** illustrate a particular embodiment of a lens according to the present invention wherein the main body of the lens constitutes the near vision optical zone N, while the distance vision optical zone D is provided as a marginally truncated circular segment in the superior portion of the lens. In the illustrated embodiment, zone D is set into the convex surface of the lens as best seen in FIG. **14**, creating a thinned channel effect at **16** across the superior edge portion of zone D which increases the flexibility of the apex of the lens as described above.

FIG. **15** and FIG. **16** illustrate another embodiment of a lens wherein the main body of the lens contains the distance vision optical zone D, while the near vision optical zone N is provided as a cresent-shaped segment in the form of a semicircle **30** having concave upper edge **31**. The bifocal segment may be formed by incorporating a material having a different refractive index or by forming the lens to a different focal length in that area.

FIG. **17** and FIG. **18** illustrate an example of a trifocal lens according to the present invention wherein an optical zone I having an intermediate focal length is provided as a concentric band between the outer edge **33** of optical zone D and inner edge **32** of optical zone N. FIGS. **17** and **18** illustrate another example of a trifocal lens having intermediate vision optical zone I positioned as a band between optical zone D and optical zone N. Yet other designs for bifocal, trifocal, and higher multifocal lens may be utilized in connection with the lenses of the present invention as will be apparent to those skilled in the art, and such lenses are accordingly encompassed by the present invention.

Lenses of the present invention may be prepared by those skilled in the art utilizing conventional techniques for the fabrication of soft contact lenses. For example, the lenses may be lathe cut from a dehydrated lens blank or button of a hydrophilic polymer and subsequently hydrated to obtain the soft lens product. Alternatively, the lens may be molded in a dehydrated state or in the presence of water or solvent to obtain a soft product. Lens compositions may be of polyhydroxyethylmethacrylate (HEMA), copolymers of HEMA and N-vinylpyrrolidone (NVP), silicone or other material known to be useful in the fabrication of soft contact lenses.

We claim:

1. A multifocal contact lens comprising a lens body with a generally spherical, concave inner surface adapted to fit the cornea of a human eye, and a generally convex outer surface;

said lens body having a central, horizontal axis defining a superior portion of the lens and an inferior portion;

said lens body having a central vertical axis which, at the point of intersection with said horizontal axis, defines the geometric center of the lens;

the superior portion of said lens body being substantially equiangularly truncated from points on either side of the vertical axis at the apex of the lens to points on each respective side proximal the horizontal axis;

the inferior portion of said lens body being defined by an arc of substantially uniform radius from the geometric center of the lens over a major portion of the perimeter thereof;

said lens including a first optical zone having at lease a major portion thereof in the superior portion of the lens;

said lens including a second optical zone having at least a major portion thereof in the inferior portion of the lens;

the focal length of said second optical zone being shorter than that of said first optical zone.

2. A lens of claim **1** wherein the optical center of the concave inner surface is at the geometric center of the lens.

3. A lens of claim **1** wherein the optical center of said first optical zone is on the vertical axis in the superior portion of the lens.

4. A lens of claim **3** wherein the optical center of said first optical zone is spaced 0.5 to about 2.0 mm above the horizontal axis of the lens.

5. A lens of claim **1** wherein the optical center of said second optical zone is on the vertical axis in the inferior portion of the lens.